

Audio Operational Amplifier

Features

- Extremely low noise
- High output power
- Low quiescent current
- Low distortion
- Operation under a wide range of supply voltages
- Wide power bandwidth
- Standard OP-AMP connections (Plug-in or P.C. mount)
- Stable operating characteristics
- Electrostatically shielded
- Short-Circuit and overload protected

Applications

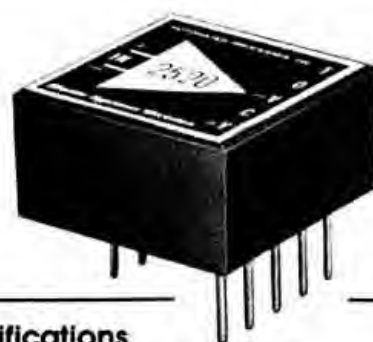
- Microphone Preamplifiers
- Line or Booster Amplifiers
- Lossless Combining Amplifiers
- Balanced Transformerless Amplifiers
- Equalizers and Equalized Preamplifiers
- Earphone or Small Speaker Drivers

The Model 2520 is a high gain, wide band, direct coupled amplifier with differential input, designed specifically for audio amplifier applications. Several Operational Amplifier circuits typical of those most often used in the audio field are shown on the following page, along with their characteristics. These circuits have been tested and the data shown has been validated in Automated Processes laboratories.

The virtually perfect performance of the Model 2520 in audio operational amplifier applications makes possible the design of complete systems utilizing this low cost device as the only active element.

Since Operational Amplifier circuits derive their characteristics almost entirely from the performance of the passive elements connected into the feedback loop, accurate, predictable, and stable performance is assured. The use of this single active plug-in element reduces maintenance and service costs to a minimum.

The specially formulated, thermally conductive epoxy in which this nine transistor amplifier is encapsulated, protects the internal circuitry against thermal shocks, vibration and humidity. Conservative design based upon "worst case analysis" plus thorough in-process inspection and performance test after "burn-in" assure long life and reliable performance.



Specifications

Gain: Greater than 110 dB, DC

Frequency Response: Small signal; Gain Bandwidth Product -50 MHz; Full Output Frequency -40 kHz

Equivalent Input Noise: Less than 0.5 microvolts

Input Impedance: Greater than 10 megohms, DC

Input Current Offset: 25 nA Typ.; 75 nA Max.

Input Voltage Offset: 4mV Typ.; 10 mV Max.

Common Mode Input: ± 12 Volts with ± 15 VDC supply; ± 15 Volts with ± 20 VDC supply

Distortion: 0.2% THD, 20 to 20,000 Hz at rated output

Output Voltage: Greater than 7.75 Volts RMS, ± 15 VDC supply; Greater than 11 Volts RMS, ± 20 VDC supply

Minimum Load Impedance: 75 Ω for full output voltage

Continuous Power Output: (Minimum Load Impedance) 0.8 Watts RMS @ ± 15 VDC supply; 1.5 Watts RMS @ ± 20 VDC supply

Quiescent Current: 15 Milliamperes @ ± 15 VDC supply; 26 Milliamperes @ ± 20 VDC supply

Current at Rated Output 600 Ω Load:

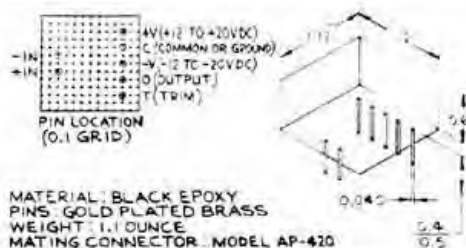
18 Milliamperes @ ± 15 VDC supply;

32 Milliamperes @ ± 20 VDC supply

75 Ω Load: 60 Milliamperes @ ± 15 VDC supply; 85 Milliamperes @ ± 20 VDC supply

Power Supply Voltage: Bi-polar, ± 12 VDC to ± 20 VDC

*Output offset may be nulled to zero by means of a 100k Ω trim pot between the +V and I terminals. This is normally not necessary in Audio applications.



Our staff is fully equipped and stands ready to provide engineering services, from applications assistance to complete system design, and fabrication